

HP 3000 Series 9X7 PA-RISC Computer Systems

Operator Handbook

Series 9X7 Family



HP Part No. A1707-90010
Printed in U.S.A. 1992

Third Edition
E1292

Notice

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photographed, reproduced, or translated to another language without prior written consent of Hewlett-Packard Company.

The information contained in this document is subject to change without notice.

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Printing History

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one-to-one correspondence between product updates and manual updates.

First Edition	October 1991
Second Edition	July 1992
Third Edition	December 1992

List of Effective Pages

The List of Effective Pages gives the date of the current edition and of any pages changed in updates to that edition. Within the manual, any page changed since the last edition is listed under this heading with the date of the edition. No information is incorporated into a reprinting unless it appears as a prior update.

Front material	December 1992
Chapter 3	December 1992
Chapter 4	December 1992



DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: Herrenberger Straße 130
7030 Böblingen, Germany

8000 Foothills Blvd.
Roseville, CA 95747, U.S.A.

declares, that the product

Product Name: PA-RISC Computer System

Model Number: HP 3000 Models: 917LX, 927LX, 937LX,
947LX, 957LX, 967LX, 937, 947, 957, 967,
977, 987, 937RX, 937SX, 947RX, 947SX,
957RX, 957SX, 967RX, 967SX, 977SX and
987SX

conforms to the following Product Specifications:

Safety: EN 60950 (IEC 950)

EMC: EN 55022 class A / CISPR 22
prEN 55101-2 / IEC 801-2, 3 kV CD, 8 kV AD
prEN 55024-3 / IEC 801-3, 3 V/m

Böblingen, 17-Nov.92
date

H. Halverscheid
Hartmut Halverscheid, Quality Manager

Roseville, 11/19/92
date

Ed Heinsen
Ed Heinsen, Quality Manager

Safety and Regulatory Information

For your protection this product has been tested to various national and international regulations and standards. The scope of this regulatory testing includes electrical/mechanical safety, radio frequency interference, ergonomics, acoustics, and hazardous materials. Where required, approvals obtained from third-party test agencies are shown on the product label. In addition, various regulatory bodies require some information under the following headings.

FCC Statement (USA only)

The United States Federal Communications Commission (in Subpart J, of Part 15, Docket 20780) has specified that the following notice be brought to the attention of the users of this product:

Warning	This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested for compliance with the limits of Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.
----------------	---

DOC Statement (Canada only)

This equipment does not exceed the class A limits for radio noise emissions as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Japanese Radio Frequency Interference

The following notice is for users of this product in Japan:

この装置は、第一種情報装置（商工業地域において使用されるべき情報装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

German Radio Frequency Notice

This is to certify that this product meets the Radio Frequency Interference Requirements of Directive 1046/84. The German Bundespost has been notified that this equipment has been put into circulation and has been granted the right to check the product type for compliance with these requirements.

Funkentstörung Deutschland (German EMI Compliance) Herstellerbescheinigung

Hiermit wird bescheinigt, daß dieses System in Übereinstimmung mit den Bestimmungen von Postverfügung 1046/84 funkentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Systems angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Acoustics (Germany)

Laermangabe (Schalldruckpegel LpA) gemessen an Arbeitsplatz bei normalen Betrieb nach DIN 45635, Teil 19:

Acoustic noise (A-weighted sound pressure level LpA) measured at operator's position, normal operation, to ISO7779:

HP 3000 9X7RX/SX and the PLUS System:

47dB bis (up to) 37° C, 51dB ueber (above) 37° C

United Kingdom Telecom Statement (For the United Kingdom Only)

Pursuant to Section 22 of Telecommunications Act of 1984, this product is approved for indirect connection to Public Telecommunications systems within the United Kingdom under the General Approval number NS/G/1234/J/100003.

The following notice is required by the British Approvals Board for Telecoms (BABT). Please contact your HP Sales Office if there are any questions.

Warning	Interconnection directly, or by way of other apparatus, of ports marked with "United Kingdom Safety Warning: Refer to users instructions" with ports marked or not so marked may produce hazardous conditions on the telecom network. Advice should be obtained from a competent engineer before such a connection is made.
----------------	--

To prevent an electrical shock to the operator, disconnect this product from the BT network before the mains plug is removed. Do not hard-wire the BT network connection.

The United Kingdom Safety Warning applies to all ports.

Safety Considerations

This product and related documentation must be reviewed for familiarization with safety markings and instructions before operation. The following figure shows some of the safety symbols used on the product to indicate various safety considerations.



Instruction manual symbol: the product will be marked with this symbol when it is necessary for the user to refer to the instruction manual in order to protect the product against damage.



Indicates hazardous voltages.



Indicates earth (ground) terminal (sometimes used in manual to indicate circuit common connected to grounded chassis).

Warning

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, of the like, which if not done correctly or adhered to, could result in injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.

Caution

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, of the like, which if not done correctly or adhered to, could damage or destroy part or all of the product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

Battery Notices

This product may contain a sealed, lead acid battery. Replace only with the same type and part number. Recycle used battery or send to the following address for proper disposal:

Hewlett Packard Co.
Environmental Health and Safety Department
8000 Foothills Boulevard
Roseville, CA 95678
Att: Battery Disposal Coordinator

WARNING: Fire, explosion and severe burn hazard! Do not crush, disassemble, heat, incinerate, or expose the battery to water.

Safety Warnings

This product has not been evaluated for connection to an **IT** power system (ac distribution system having no direct connection to earth, according to IEC 950).

Locate the ac outlet near the computer! The ac power cordset is this product's main ac disconnect device and must be easily accessible at all times.

To reduce the possibility of an electrical shock from the telephone network, plug the computer into the ac outlet prior to connecting to the network. Also, disconnect the network before unplugging the computer from the ac power outlet.

To reduce the risk of electric shock, ensure the front and rear bezels are installed at all times!

This product is designed to operate at the ac line voltages of 100, 120, 220, or 240 V $\pm 10\%$. Contact your local HP sales office if your line voltage is outside this range.



Contents

1. Introduction	
2. System Controls and Indicators	
Front Panel Controls and Indicators	2-1
Multifunction I/O Card Indicators	2-4
3. Starting the Computer System	
Turning On the Computer System	3-1
To identify the computer's first displays	3-3
To identify warning and error conditions	3-9
4. Using and Maintaining the Tape Drive	
Getting To Know Your Tape Drive	4-2
Ordering HP DDS cassettes	4-2
Operating a DDS Tape Drive Using DDS Cassettes	4-3
Preparing Your Cassette	4-4
To allow a cassette to be written on	4-4
To protect data on a cassette	4-4
To load a cassette	4-5
To unload a cassette	4-6
To label a cassette	4-7
Interpreting Indicator Status Lights	4-7
Interpreting Status Signal Conditions	4-9
If you have a read only tape	4-9
If you see a caution signal	4-9
If the humidity is high	4-10
If you have a fault warning	4-10
Handling and Storing Cassettes	4-10
Temperature considerations	4-11
Environmental and usage limits	4-11

To determine storage life of a DDS cassette	4-12
Cleaning Tape Heads and Choosing Your Cassettes	4-12
To clean the tape heads	4-13
To choose cassettes labeled DDS	4-13
To determine number of DDS cassettes needed	4-13

5. Troubleshooting

Problems Starting the System	5-1
Power on problems	5-1
Initial system load problems	5-3
Operating system boot problems	5-3
Clearing your system	5-4
MPE/iX Verifier	5-5
Invoking MPE/iX Verifier	5-5
Verifier global status messages	5-5
Verifier log file	5-7
General Usage Problems	5-7
Problems with passwords	5-7
Problems logging on	5-7
Problems streaming jobs	5-9
Problems invoking commands	5-9
Command problems—obtaining online help	5-9
Using the Help Facility tutorial	5-11
To display a specific Help Facility topic	5-11
To list commands by classification within the Help Facility	5-12
To display command information within the Help Facility	5-12
To display help outside the Help facility	5-13
To display help from within an HP 3000 subsystem	5-13
Interpreting error messages	5-14
Getting help with command interpreter errors	5-14
Getting help with Store/Restore errors	5-15
Getting help with command interpreter warning messages	5-16
Problems with the print command	5-17
Problems printing	5-18
Problems using EDIT/3000	5-20
Problems aborting, suspending or resuming jobs	5-21
Problems managing files	5-21
Problems with passwords	5-22

Problems with backups	5-22
Problems with terminals	5-23
Problems with the console	5-26
Is the prompt missing?	5-26
Is the console not responding?	5-26
Is the console BAUD rate set to 9600?	5-27
Is the console receiving messages from other users?	5-27
Are there too many pending console requests?	5-27
No response to Ctrl A ?	5-27
Switch console control to a working terminal	5-28
Problems with tapes	5-29
Other Hardware problems	5-30

Figures

2-1. System Front Panel	2-1
2-2. Operating State Display	2-3
2-3. Multifunction I/O Card Indicators	2-4
4-1. C1503B/C1504B (3.5 inch) Tape Drive Front Panel	4-1
4-2. Close the Recognition Hole to Write on a Cassette	4-4
4-3. Loading a Cassette	4-5
4-4. Unloading a Cassette	4-6

Tables

2-1. Operating State Indicators	2-3
3-1. START with 1, 2, 3, or 4 Disk Drives	3-7
4-1. DDS Tape Requirements	4-3
4-2. HP C1503B/C1504B DDS Tape Drive (Figure 4-2)	4-8

Introduction

This handbook contains information for the operator to operate and troubleshoot the HP 3000 Series 9X7 Computer System. This manual is addressed to personnel who have been minimally trained in the use of HP 3000 computers and the designated system administrator. The minimally trained person may be a first time user or one who has had previous training or experience in these systems.

This handbook is not a complete instruction guide for the operation of the HP 3000 Series 9X7 Computer System. For further details on system operation or system administration, refer to the *HP 3000 System Operators Task Guide*, (P/N 32650-90137) or other HP System Administrator manuals.

The contents of this manual are given as follows:

Chapter 1 - Describes the contents of the handbook and the audience for which it is intended.

Chapter 2 - Describes the system controls and indicators.

Chapter 3 - Gives instructions for system turn-on and startup.

Chapter 4 - Contains Digital Data Storage (DDS) format tape drive maintenance information.

Chapter 5 - This chapter provides customer procedures for troubleshooting failures that may occur during system self-test or normal operation.



System Controls and Indicators

This chapter gives a physical description of the controls and indicators on the computer front panel (Figure 2-1) and Multi-function I/O card (Figure 2-3).

Front Panel Controls and Indicators

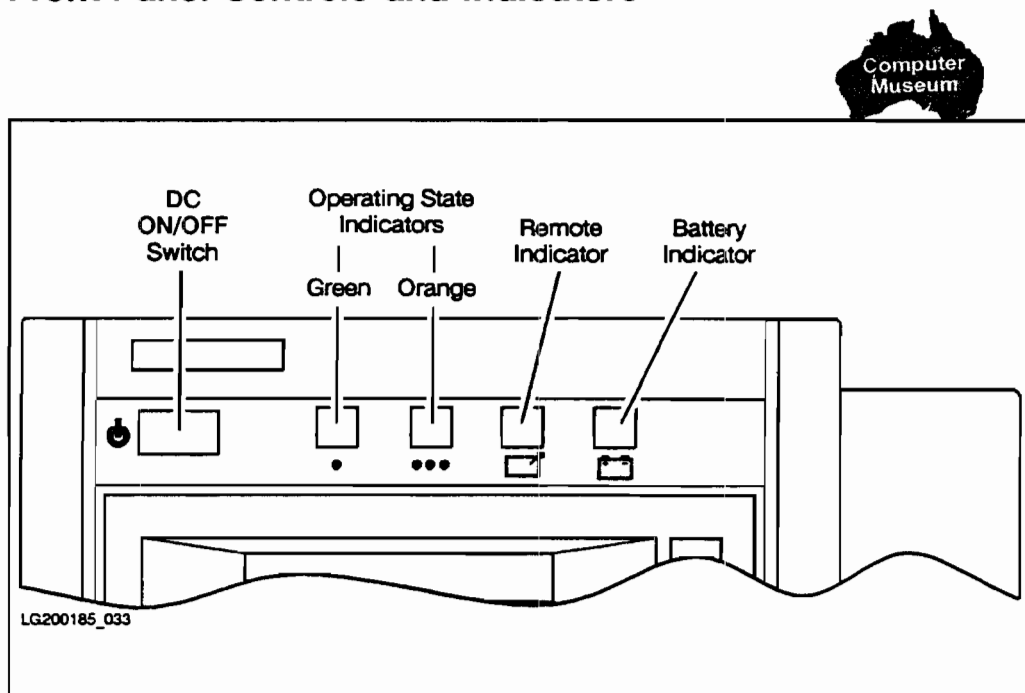


Figure 2-1. System Front Panel

DC ON/OFF switch: Controls the dc power (*NOT* the ac power from the wall outlet) for the computer, the internal disk drive and internal tape drive. Once the computer has started, you should only turn this off as part of the shutdown procedure.

Caution The **OFF** part of the front panel switch only disconnects the dc power from the inside of the computer cabinet. AC voltage is still present at the computer power supply. To remove ac power from the computer, unplug both power cords.

Operating State Indicator Green: This green light indicates that the computer is running normally. It also works in conjunction with the fault indicator and the battery indicator.

Operating State Indicator Orange: This orange light indicates that a fault exists in the computer. Refer to the "Troubleshooting" chapter for actions to take if this light comes on.

Caution AC power may be present when all indicators are off. Disconnect both power cords before performing any maintenance.

Remote Indicator: When this yellow light is ON it indicates that remote access through a modem port is enabled, allowing outside access to the computer. This would be useful if remote support is desired. When this light is OFF, the remote access is disabled or denied.

Battery Indicator: When the yellow battery indicator is on and no other indicators are on, the computer is in the battery back-up mode. This indicates that the ac electrical power is disconnected or off. If the battery indicator is on and one or more of the other indicators are on, the batteries are charging.

The green (run) indicator and orange (fault) indicator work in conjunction with the Operating System Status (OSTAT) field of the computer console. Table 2-1 shows the relationship of the indicators and OSTAT field of the system console. Refer to Chapter 5 for a definition of the system console OSTAT display.

2-2 System Controls and Indicators

Table 2-1. Operating State Indicators

Green Run LED	Orange Fault LED	Console Display OSTAT Field	System State
Off	Off	OFF	The system is shut down and dc power is off.
Off	On	FauLT	The system is in a fault state and halted.
On	Off	RUN	Normal system operation.
On	On	TEST	The system is executing selftest.
On	On	INITialize	The system is initializing.
On	On	SHUTdown	The operating system is being shut down.
On	On	WARNing	This is a warning state.
On	On	ALL on	Normal system operation.

The console display will be along the bottom of the screen. The words or letters in bold in Table 2-1 will be displayed after the word **OSTAT:** as indicated by the **XXXX** in Figure 2-2.

```
OSTAT: XXXX  REMOTE: aaa  bbb  ccc  ACCESS FAULT: nn
```

Figure 2-2. Operating State Display

Note A complete definition of this line is located in *Chapter 3*, page 3-3, step 2.

Multifunction I/O Card Indicators

The Multifunction I/O card (located in the back of the computer) has three indicators on the card bulkhead. Figure 2-3 shows indicator locations.

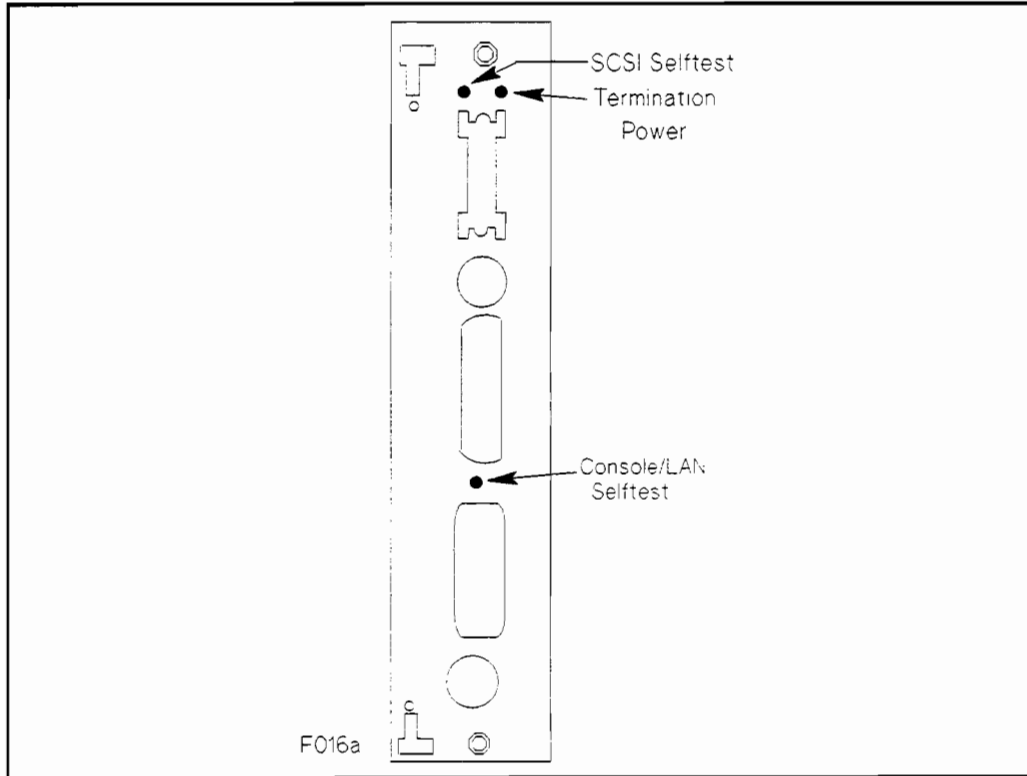


Figure 2-3. Multifunction I/O Card Indicators

SCSI Selftest: OFF is normal, ON indicates a SCSI selftest failure. You may have a problem with the SCSI interface.

Terminator Power: ON is normal, OFF indicates no power. Correction of this condition should be handled by trained maintenance personnel.

Console/LAN Selftest: This indicator OFF is normal. ON indicates a selftest failure, BLINKING indicates a LAN network error external to the card. A failure indication should be handled by trained maintenance personnel.

2-4 System Controls and Indicators

Starting the Computer System

The procedures listed in this chapter show you how to interact with the computer to get you through initial power up and self-test, to the ISL (Initial System Load) prompt (ISL>_). The ISL prompt shows where to begin entering the commands to load the MPE/iX operating system software.

When the ISL prompt is displayed, proceed with the process of getting to the system prompt (:) and configuring your software.

Turning On the Computer System

The computer and its external equipment contain built in self-test programs. These programs are automatically run each time the computer and the equipment are turned off and then turned on again.

Remember, depending on how much internal memory your computer has, the computer self-test can take up to approximately 2 to 5 minutes to complete.

Caution	<i>Do not</i> move the computer or disk cabinet while the power is on. Moving the equipment while power is on can cause disk damage and loss of data.
----------------	---

When turning on the computer system (this includes all equipment) be sure to follow the sequence listed below:

Caution	If any of the external equipment has been OFF due to any environmental problem, such as heating or air conditioning failure, allow approximately 30 minutes for the temperature of the equipment to stabilize before turning on the computer.
----------------	---

1. Turn on all the external equipment (except the DTC or DTC-48) connected to the computer first.
2. Check all READY or ONLINE indicator lights on the external equipment to be sure that they indicate being powered up and ready.
3. For HP 3000 9X7RX/SX PLUS Systems, perform the following steps on the OpenView PC:
 - a. Turn on the Openview PC and PC Monitor.
 - b. when the PC monitor displays the DOS prompt (C:\>), type *win* and press **Enter**. This starts the Windows program. The PC hard-disk has all the necessary software to come up in Windows with the console window (*Console ldev-20*) active (in the foreground).
 - c. If the console window is not in the foreground of the PC monitor, place the mouse arrow in the top bar of the window (with **Console ldev-20** written in it) and click the left mouse button once. This brings the console window into the foreground and makes it active. For information about using windows on the OpenView console, refer to the *HP OpenView Console User's Guide* (B3118-90001).
 - d. The console window and PC keyboard now act as a normal system console. All screen displays described in this chapter are displayed in the console window as shown.
 - e. To make the console window the largest size possible, place the mouse arrow in the upper right corner on the up arrow (▲) and click the left mouse button once.
4. When all external equipment indicate READY or ONLINE by their particular indicator lights, press the computer ON/OFF switch to the ON position. When the computer is turned on, be aware that the computer, internal disk, and internal tape drive are all going to power up at the same time.

3-2 Starting the Computer System

To identify the computer's first displays

The primary display for the computer is the system console (or OpenView console ldev-20 window).

1. When the ON/OFF switch on the computer is put in the ON position, you should be able to hear the cooling fan in the computer starting to rotate and the disk drive spinning up to speed. The disk drive coming up to speed takes a few seconds, so please be patient.
2. The first display on the computer console is a line of messages along the bottom of the screen indicating the self-test programs are running:

```
TEST nnnn REMOTE: disabled inactive multiple ACCESS FAULT: yy
```

- **TEST** is one of six system status (OSTAT) codes to identify what the computer is doing. They are **TEST** (self-test), **INIT** (initialize), **RUN** (normal operation), **SHUT** (shut down), **WARN** (warning), or **FLT** (fault).
- **nnnn** is a series of codes that combine with the OSTAT code to further define what the computer is doing.
- **REMOTE:** refers to the status of the remote support modem port.
- **disabled*** is the security level of the support modem port. It can be one of the following four **Enabled**, **Disabled**, **Pending**, or **Locked**.
- **inactive*** is the current activity of the support modem port. It can be **Active** or **Inactive**.
- **multiple*** shows the mode of the support modem port. It can be **Single** or **Multiple**.
- **ACCESS FAULT:** is an access fault indicator for the remote support modem port.
- **yy*** is the number of access faults that have occurred since the last time the remote enable was enabled.

* These do not apply if your computer does not have a support modem.

3. When self-test is complete, the console displays a screen similar to the following screen example:

```
Processor Dependent Code (PDC) revision x.x

Console path      = 56.0.0.0.0.0.0 (dec)
                  38.0.0.0.0.0.0 (hex)

Primary boot path = 52.6.0.0.0.0.0 (dec)
                  34.00000006.0.0.0.0.0 (hex)

Alternate boot path = 52.0.0.0.0.0.0 (dec)
                   34.0.0.0.0.0.0 (hex)

nn MB of memory configured and tested.

Auto Boot from primary path enabled.

To override, Press any key within 10 seconds.
```

The revision number *x.x* and amount of memory *nn* will vary depending on when the computer is purchased and how much memory you ordered. Your values for the paths may differ slightly from this display. The path addresses are pre-set or default configurations locked into the computer.

4. When the console display resembles step 3, the following conditions should be true:
- the console display should not end with any error messages.
 - the tape drive indicator lights should both be OFF. (See Chapter 4, "Using and Maintaining Your Tape Drive" if you need a description of the indicator lights.)

3-4 Starting the Computer System

5. If the conditions in step 4 are true, proceed with the rest of the computer start up procedures.
6. If any of the conditions in step 4 are wrong, refer to Chapter 5 "Troubleshooting".
7. The computer next asks if you want to boot from the primary boot path. The primary boot path refers to the disk drive located in the computer cabinet. Your response can be typed in either lowercase or uppercase letters.

Type Y and press the key, as shown:

```
| Boot from primary boot path (Y or N)?> Y  |
```

This establishes the boot path to the internal disk drive.

8. Next the computer asks if you want to interact with Initial Program Load (IPL) software. The IPL software is the first software loaded into the computer memory.

Type Y and press the key, as shown:

```
| Interact with IPL (Y or N)?> Y  |
```

9. The computer now starts the process of loading the IPL software from the internal disk drive, to the computer memory.

There are a number of things displayed on the computer console, as shown:

```
Alternate boot path  = 52.0.0.0.0.0.0 (dec)
                     34.0.0.0.0.0.0 (hex)
```

```
nn MB of memory configured and tested.
```

```
Auto Boot from primary path enabled.
```

```
To override, Press any key within 10 seconds.
```

```
Boot from primary boot path (Y or N)?> Y
```

```
Interact with IPL (Y or N)?> Y
```

```
Booting. . .
```

```
Boot path initialized.
```

```
Attempting to load IPL.
```

```
HARD Booted
```

```
ISL Revision x.xx.xx DATE
```

```
ISL>
```

The word **Booting** appears while the computer is booting. The next three messages display as the load process continues. The **x.xx.xx** is an Initial System Load (ISL) revision number and will vary with the release and date of the product.

3-6 Starting the Computer System

10. At this point the ISL prompt is displayed. The computer is now waiting for you to issue the command to start loading the MPE/iX operating system software.
11. Respond to the ISL> prompt with one of the following commands, depending on how many disk drives the system has. Check the customers order to determine how many disk drives were ordered in the SPU.

Table 3-1. START with 1, 2, 3, or 4 Disk Drives

TOTAL Disk Drives (from Worksheet)	Use the Appropriate Command
1	START Return
2	START GROUP=CONF9X72 NORECOVERY Return
3	START GROUP=CONF9X73 NORECOVERY Return
4	START GROUP=CONF9X74 NORECOVERY Return

For example, an HP 3000 Series 947SX model with a total of two disk drives (2 internal disk drives) would use the following command:

ISL> START GROUP=CONF9X72 NORECOVERY

12. After a few minutes, you are prompted to confirm the date and time as shown below. *If you do not respond within 15 seconds, the system accepts the displayed date and time by default, and continues with the start-up process.*

- If the date and time displayed are accurate, type Y and press , or wait for the time out.
- If they are not, type N and press within the 15 seconds allowed.

Enter the correct date and time when prompted. Time must be entered in 24-hour format (for example, 5:00 p.m. is entered as 17:00). Seconds default to 00 if not specified.

```
MPE/iX launch facility
Initialize_genesis - Version : <<870204.1552>>
TUE, AUG 11, 1991, 10:20:03 AM (y/n)? Y
```

```
[TMUX_DAM] n n n n
Initialize genesis completed.
```

The fundamental operating software is starting.

If you have used one of the commands that included the phrase **NORECOVERY**, warning messages will be displayed on the console telling you that unconfigured devices are attached to the system. These messages are normal during the first boot up. They appear during the first boot up because the final configuration is not done. Among the messages you may see are these:

```
DCC warning 103-5, Add ldev to class failure (HLIO status
FF6A00BD,.
```

```
DCC warning 103-5, Add ldev to class failure (HLIO status
FF6A00BD,.
```

```
DCC STARTUP - ERROR
```

The system is making many internal checks and is reporting that the configuration is not complete. When this checking process is complete a welcome message is displayed on the console. You are automatically logged on to the system as **OPERATOR.SYS**.

13. When the system prompt (:) is displayed, all the system self-tests are complete. At this time, turn on the DTC(s). The configuration process can begin. For configuration procedures on the OpenView PC, refer to the *HP OpenView Console Manager's Guide* (B3118-90002).

3-8 Starting the Computer System

If you have arrived at this point with no errors and you have seen console messages similar to the ones described, you are ready to proceed with the installation and configuration of the software.

Note	The installation and configuration of the system software should be done by personnel trained or experienced with HP MPE/iX systems.
-------------	--

To identify warning and error conditions

If the computer detects a condition, during the power up and initial system load sequence, that it determines is a problem, it will display either a warning or an error. A warning is something the computer thinks may be wrong, but will not stop the process it is trying to complete. This could be something that needs attention when the computer is done with its current process.

An error is a failure of something the computer needs to be done or expects to be done. An error condition stops the computer process and displays either a message, an error code, or both.

For warnings or error code definitions and possible actions to take, refer to Chapter 5 “Troubleshooting”.



Using and Maintaining the Tape Drive

This chapter describes procedures for the tape drive that comes with your HP 3000 Series 9X7 computer. A DDS tape drive stores data on cassette tapes in a format called digital data storage (DDS). To avoid loss of data and damage to your DDS drive, use only properly certified DDS cassette tapes, not DAT tapes which are only tested for audio use. HP makes no warranty for such tapes other than those sold specifically for this tape drive and recommends that you use HP DDS cassettes with your DDS-format drive.

The digital data storage (DDS) tape drive is mounted in the same cabinet with the computer. The tape drive is located just below the computer switches and indicators. The tape drive that comes with your computer system is one of the two types shown in Figure 4-1. Each tape drive has the same indicators. The difference in the tapes drives is the storage capacity.

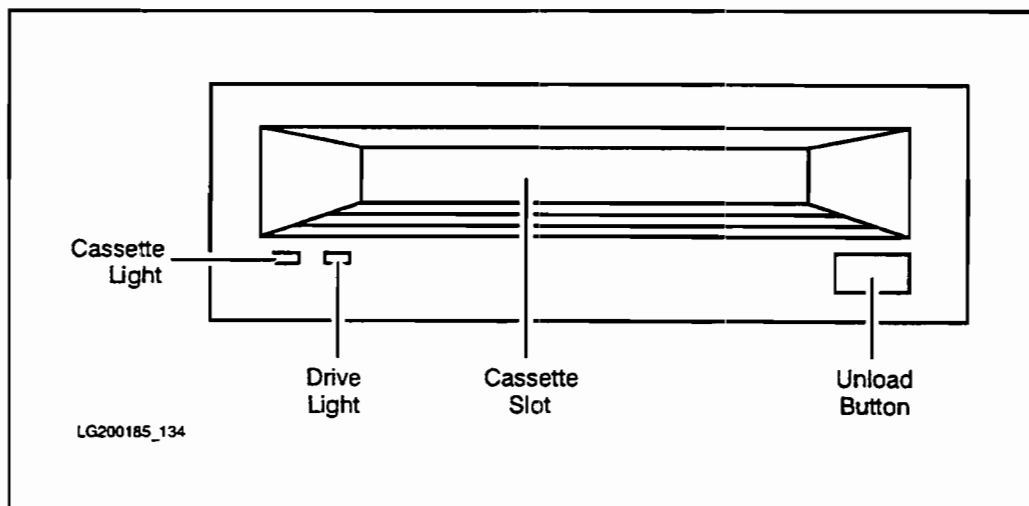


Figure 4-1. C1503B/C1504B (3.5 inch) Tape Drive Front Panel

Getting To Know Your Tape Drive

When familiarizing yourself with the tape drive and its indicators, here are some terms for you to know.

- **Cassette Slot:** is where the tape cassette is inserted and removed.
- **Unload Button:** stops any tape operation, rewinds the tape, and ejects the cassette from the tape drive.
- **Cassette Light and Drive Light:** indicate the status of the tape drive. Both lights are capable of displaying yellow or green colors. The combinations of green lights, yellow lights, and no lights, show normal operation status, operation with write protect, and caution states.

Ordering HP DDS cassettes

The 60 meter cassette tape, product number *HP 92283A*, can hold up to 1.3 gigabytes (1300 megabytes) of data. They are packaged in a red box of 5 cassettes.

The 90 meter cassette tape, product number *HP 92283B*, can hold up to 2 gigabytes (2000 megabytes) of data and are packaged in yellow.

The cleaning cassette tape is product number *HP 92283K*.

Table 4-1 Shows the types of DDS tapes available and which tape drive they are compatible with. This is important to know before loading a DDS cassette into a tape drive for operation.

Table 4-1. DDS Tape Requirements

	HP C1503B	C1504B	Non-HP DDS Device
60M (red)	Read (yes) Write (yes)	Read (yes) Write (yes)	Read (yes) Write (yes)
90M (yellow)	Read (yes) Write (yes)	Read (yes) Write (yes)	Read (*) Write (*)

* Refer to the manufactures specification.

Operating a DDS Tape Drive Using DDS Cassettes

Operating your tape drive consists of knowing how to do the following:

- Loading and unloading your cassette.
- Making a tape for read only.
- Making a tape for read and write.
- Handling and storing your cassette.
- Periodic tape head cleaning.

Preparing Your Cassette

When preparing your cassette for loading into the tape drive, you need to decide if the cassette should be a read and write tape or a read only tape.

To allow a cassette to be written on

To allow a cassette to be written to as well as read from, slide the tab on the rear edge of the cassette so that the recognition hole is closed. This cassette is a read and write tape as shown in the following illustration.

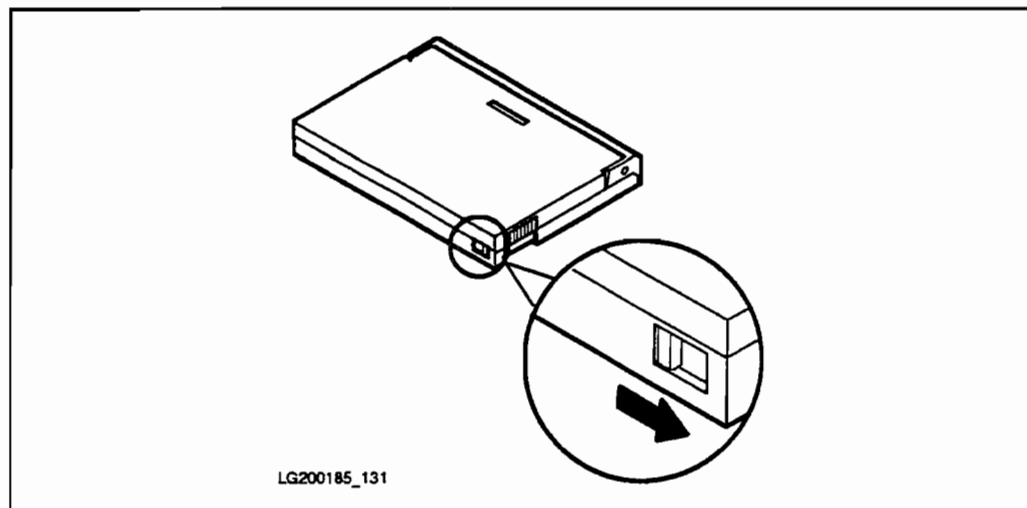


Figure 4-2. Close the Recognition Hole to Write on a Cassette

To protect data on a cassette

To protect the data on a cassette from being altered or overwritten, you can make a read only cassette. To do this, slide the tab on the rear edge of the cassette so that the recognition hole is open.

To load a cassette

To load your cassette into a digital data storage (DDS) tape drive:

1. Insert the tape cassette squarely into the slot in the front of the drive. Make sure that the label is facing uppermost, then follow the arrowhead on the cassette case. Only *minimum* force is necessary when doing this. *Do not* restrain the cassette when pushing it into the drive because it could cause it to jam in the mechanism. The drive will automatically eject an incorrectly loaded cassette after 10 seconds. See Figure 4-3.

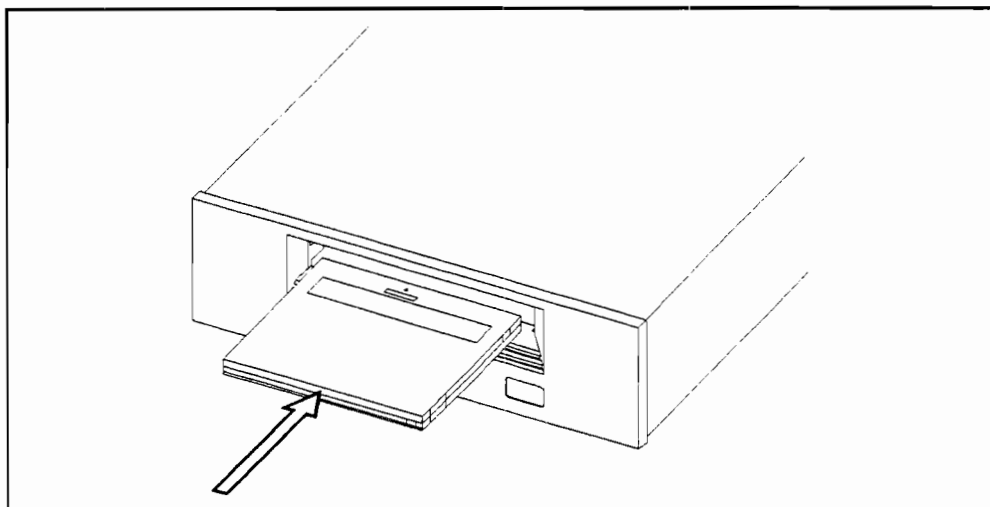


Figure 4-3. Loading a Cassette

2. Locate the cassette squarely in the slot (not at an angle). Using single-finger pressure on the rear, center of the cassette will allow the autoloading mechanism to take the cassette and load it into the drive. See Figure 4-3. The loading sequence to thread the tape takes about 25 seconds.

Caution

The cassette may jam if the cassette is inserted at an angle, or forced into the mechanism. Refer to information sheet provided with cassette tapes.

3. Observe that the load sequence is finished when only the cassette light remains lighted. The light is a steady green if the cassette is read and write, or yellow if the cassette is read only.

Caution *Do not* try to load another cassette when a cassette is already in the drive. Check for a “cassette loaded” indication on your tape drive if you are not sure whether or not a cassette is loaded.

To unload a cassette

To unload your cassette from the tape drive:

1. Press the unload button on the front panel. See Figure 4-4.

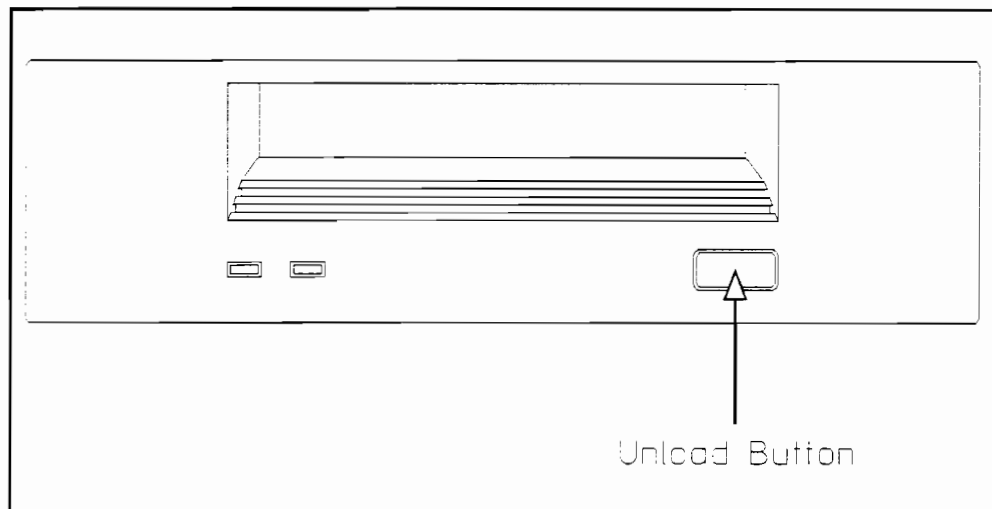


Figure 4-4. Unloading a Cassette

This starts a sequence that rewinds the tape to the beginning and ejects the cassette. The sequence takes about 10 seconds.

During the unload sequence, both front panel lights pulse green (yellow if the tape is read only).

2. Remove the cassette, label it appropriately, and store it in its plastic case.

4-6 Using and Maintaining the Tape Drive

To label a cassette

In order for you to identify what kind of information is stored on the cassette, it is important to have a label on it. When you label your cassette, follow these guidelines:

- Use only one label on each cassette.
- Use only standard labels recommended for cassettes.
- Stick label only in the label area. Do not stick anything else to the cassette.

Interpreting Indicator Status Lights

The various status states you will see the indicators display are shown in Table 4-2. Table 4-2 represents both the C1503B and the C1504B tape drive.

The Cassette indicator and the Drive indicator are bi-color Light Emitting Diodes (LEDs). They can show green or yellow light.

Table 4-2. HP C1503B/C1504B DDS Tape Drive (Figure 4-2)

Cassette Light	Drive Light	Condition
No Cassette States		
Off	Off	No cassette loaded or power is off.
Flash Yellow	Flash Yellow	Self-test in progress.
On Green	Flash Green	No cassette, tape drive is active.
Write Enable States		
On Green	On Green	Cassette loaded, tape drive online.
On Green	Flash Green	Cassette loaded, tape drive active.
Pulse Green	Pulse Green	Loading, unloading, or ejecting cassette.
On Green	Off	Tape drive offline.
Write Protect States		
On Yellow	On Green	Read only cassette loaded, tape drive online.
On Yellow	Flash Green	Read only cassette loaded, tape drive active.
Pulse Yellow	Pulse Green	Loading, unloading, or ejecting cassette.
On Yellow	Off	Tape drive offline.
Error States		
On Green	Pulse Green/Yellow	Caution ¹ (media warning).
On Yellow	On Yellow	Moisture detected ² or no termination resistors.
Pulse Yellow	On Yellow	Fault ³ .

¹ This occurs during writes where an excessive number of read after write errors occur and during reads where an excessive level of C3 correction being applied. This indication would persist until the cassette is unloaded.

² The termination resistor problem would only occur at power on time and the tape drive will appear to have *hung* during self-test.

4-8 Using and Maintaining the Tape Drive

³ Indicates a failure of the DDS Field Replaceable Unit.

Interpreting Status Signal Conditions

When operating your tape drive, be aware of the indicator lights displaying conditions to notify you of the status.

If you have a read only tape

If the cassette is a read only tape, the cassette light shows yellow during normal operations.

If you see a caution signal

The caution signal is indicated by the cassette light alternating between green (for 4.5 seconds) and off (for 0.5 seconds). For normal operation it would typically be a steady green. If this caution condition occurs, it means the tape drive is having to correct an excessive number of errors when using the cassette. This can mean the tape heads need cleaning, or that the tape is nearing the end of its useful life.

When you see a caution signal, clean the tape heads using the cleaning procedures described in the *To Clean the Tape Heads* section of this chapter. If the signal occurs again, you could have a corrupt tape cassette. Discard the tape and use a new one or a different tape. Also refer to the section titled *Problems with tapes* located in *Chapter 5* of this handbook.

If there are data on the suspect tape, that you want to keep or recover, you could copy the data onto another tape.

Caution

The process of copying data from one tape to another involves transferring data to the computer first then onto a known good tape. This process can result in over-writing good data in another location of the computer. If you are unfamiliar with this process, please refer to *HP 3000 System Operator Tasks* (P/N 32650-90137) manual or your *System Administrators Guide* for instructions and proper commands to use.

Additional information about managing files is provided in the *Using Your System* manual.

If the humidity is high

If the humidity rises too high, both front panel indicators show a steady yellow. The tape drive will not perform any operations requiring movements of the tape until the humidity has dropped to within specification again. Refer to "Handling and storing cassettes" in this section for information on how to handle your cassette tapes in these conditions.

If you have a fault warning

If a fault is diagnosed during the self-test performed when the system is switched on, the result is indicated by the cassette light pulsing in groups of one, two, or three pulses, while the drive light shows a steady yellow. If this happens make a note of the pattern and call your Hewlett-Packard support representative.

Handling and Storing Cassettes

Environmental conditions can affect the reliability of data stored on cassette tapes. It is recommended that you only use cassettes labeled "DDS" in your DDS format tape drive. *Do not* use cassettes labeled "DAT", because the media is not certified and integrity cannot be guaranteed. It is recommended that you only use DDS cassettes marketed by Hewlett-Packard, which meet exacting high standards.

To ensure data integrity for your cassettes, follow these guidelines:

- Do not touch the tape, or attempt to clean the tape path or tape guides inside the cassette.
- Do not leave cassette tapes in excessively dry or humid conditions.
- Do not leave cassette tapes in direct sunlight or in places where magnetic fields are present (for example, under telephones or near transformers).
- Do not drop cassettes or handle them roughly.

4-10 Using and Maintaining the Tape Drive

- Do not stick more than one label onto cassettes; extra labels could cause the cassettes to jam in the tape drive.
- Store cassettes in their plastic cases when not in use.
- Do not let cassettes get dirty. Always stack the cassettes in a clean environment.
- Do not use cassettes when the Caution signal is displayed by the cassette light, located on the front panel. The light shows a repeating pattern of green for 4.5 seconds, then off for 0.5 seconds. If this light pattern appears, it means that the tape heads need cleaning or that the tape is nearing the end of its useful life.

Temperature considerations

The cassettes should only be used at temperatures between 5°C (41°F) and 45°C (113°F). You can, however, store them at temperatures down to -40°C (-40°F).

If you expose cassettes to temperatures outside the operating limits, stabilize them before you use them. To do this, leave the cassettes in the recommended operating temperature for a minimum of two hours.

To avoid temperature problems, observe these guidelines:

- Ensure that the tape drive is in a place where the temperature is relatively stable, for example, away from open windows, fan heaters, and doors.
- Avoid leaving cassettes in severe temperature conditions, for example, in a car standing in bright sunlight.
- Avoid transferring data (reading from and writing to cassettes) when the temperature is changing by more than 10°C (50°F) per hour.

Environmental and usage limits

Appropriate conditions of operating, storage (long-term), and transporting environments for your cassette tapes are:

- **Operating temperature** is 5°C to 45°C (41°F to 113°F).
- **Operating humidity** is 20% to 80% relative humidity, non-condensing. Maximum wet bulb temperature is 26°C (79°F).

- **Storage temperature** is 5°C to 32°C (41°F to 90°F).
- **Storage humidity** is 20% to 60% relative humidity, non-condensing.
Maximum wet bulb temperature is 26°C (79°F).
- **Transporting temperature** is -40°C to 45°C (-40°F to 113°F).
- **Transporting humidity** is 5% to 80% relative humidity, non-condensing.
Maximum wet bulb temperature is 26°C (79°F).
- **Recommended useful life** of a cassette is 300 insertions into the tape drive.

To determine storage life of a DDS cassette

Data can successfully be stored on DDS cassettes for a period of 10 years. You should give each cassette a full pass in the drive at least once a year to prevent sticking. Store cassettes according to the environmental specifications mentioned.

Cleaning Tape Heads and Choosing Your Cassettes

The environment in which you use your tape drive and store the cassettes helps provide optimum conditions for good performance. It is also important that you take care to ensure that reliability continues. You can do this through regular cleaning of the tape heads in the drive, and through correct handling of the cassettes. Cleaning the tape heads help prevent problems of data integrity in two areas:

- Head clogs, when a speck of dirt adheres to the tape head and prevents data being read or written correctly.
- Scratches on the tape, usually caused by dirt particles becoming trapped between a tape guide and the tape and scratching the surface as the tape passes by.

Any of the following conditions indicate that the tape heads need cleaning:

- After every 25 hours of use.
- If the tape drive indicates that it is correcting an excessive number of errors (see your tape drive manual for details).

4-12 Using and Maintaining the Tape Drive

- When the green Caution signal displayed by the cassette light, located on the front panel, is active.
- When both the cassette and drive lights are on yellow.

To clean the tape heads

The following procedure is to be used when cleaning the tape head:

1. Insert the cleaning cassette, *product number HP 92283K*, into the tape drive slot. (*Do not* use swabs or other means of cleaning the heads.) The tape drive will automatically load the tape and clean the heads. When the cleaning is complete, the tape drive will unload and eject the tape.
2. After each cleaning, record on the cleaning cassette that it has been used.
3. Discard the cleaning cassette after 25 uses. Ensure that you have another cleaning cassette to use.



To choose cassettes labeled DDS

It is important that you use cassettes labeled “DDS” in your DDS-format drive. *Do not* use cassettes labeled “DAT”, because the media is not certified and therefore integrity cannot be guaranteed. In addition, DAT cassettes have a different mechanical specification which may cause them to jam in the mechanism. Damage caused by the use of non-DDS media may invalidate the warranty on your tape drive.

To determine number of DDS cassettes needed

The total number of cassettes needed depends on your backup routine. However, it is advisable to keep extra cassettes for the following:

- A spare set for full backup.
- A spare cassette for use for diagnostics by your HP Customer Engineer.
- Cassettes for file transfers.
- Cassettes for any archival storage you may require.



Troubleshooting

This chapter discusses basic troubleshooting and problem identification procedures.

Problems Starting the System

This section discusses how to identify system startup problems by reading front panel lights and console displays. The most important thing to do when you are starting the system is to watch the console and front panel lights.

Generally speaking, messages display fairly rapidly during all phases of startup. This is normal. A long delay (more than 3 or 4 minutes) in the display of messages may indicate a problem.

Power on problems

Your computer performs certain self-tests whenever the power is turned on. A display similar to the following appears at the bottom of the console:

```
OSTAT: XXXX  REMOTE: aaa  bbb  ccc  ACCESS FAULT: nn
```

- Does OSTAT appear as WARN or FLT?

FLT indicates a fault and usually prevents your system from coming up.

WARN is a warning and indicates something is not quite right, but usually won't prevent your system from coming up. If your system will not come up, write down both the contents of OSTAT and the four characters (XXXX) next to it.

Try the steps under “Clearing your system” in the following pages. If they don’t work, call your service representative.

For example:

```
FLT : 1F3A  REMOTE: aaa  bbb  ccc  ACCESS FAULT: nn
```

In this case a fault has occurred (OSTAT field is FLT) and you would record 1F3A and call your service representative.

- Note the color of the indicator lights on the computer front panel. Is the orange indicator light on? Is the green indicator light off?

This indicates a fault. Try the steps under “Clearing your system” in the following pages. If they don’t work call your service representative.

- Does your system appear locked? Does it seem like nothing is happening?

This may also be a fault. Try the steps under “Clearing your system” in the following pages. If they don’t work call your service representative.

- If you see the following display:

```
booted...
```

and nothing happens for 40 to 60 seconds, try the steps under “Clearing your system” in the following pages. If they don’t work call your service representative.

Caution	Do not access the internal parts of either the computer or any peripheral equipment. Do not remove the back panel of the computer or any other device.
----------------	--

Initial system load problems

If your machine passes self-test it proceeds to ISL (Initial System Load). During ISL many messages are displayed on the console screen.

- Has your machine stopped displaying messages and is the ISL> prompt not displaying?

If your machine is successfully coming up it should continue to display messages at intervals of no longer than 2 or 3 minutes (usually faster). If ISL successfully completes you will see the ISL> prompt. If you don't see the ISL> prompt and nothing else appears to be happening you may have a problem. Copy down the last message displayed, try the steps under "Clearing your system" in the following pages and start your system again. If the problem recurs call your service representative.

Operating system boot problems

Operating system boot begins when you enter a START command at the ISL prompt.

- Do you see any message indicating that a disk is not available for mounting?

You may have used the wrong configuration file name in the START command. Verify your configuration file or try a different one. Shutdown the system and bring it up again by entering the following commands:

```
CTRL A  
= SHUTDOWN RTN
```

The shutdown process displays several messages. When shutdown is complete ((SHUT 6) displays or 4 or 5 minutes passes and it appears that nothing is happening) enter the following:

```
CTRL B  
CM>RS RTN
```

When you see the ISL> prompt enter the following with the correct configuration file name:

```
ISL> START FILENAME NORECOVERY
```

- Do you see the following message?:

```
Error - Unable to get the SYSGEN version  
or the version is obsolete
```

```
status - subsys: #204 info: #-9051
```

This message suggests the configuration files shipped with your machine have been changed. Call your service representative for the correct files.

- Have you seen any error messages like the following?

```
13:31/24/ DCC warning 103-5,  
Add ldev to class failure (hlio status FF6A00BD)
```

```
13:31/18/ DCC STARTUP - ERROR
```

If so, and if you are booting for the first time with a new configuration file, please *ignore* them.

Clearing your system

The following steps may clear a machine that appears to have faulted or otherwise won't come up. After trying the following, begin your startup procedure over again. If you still can't bring the system up, call your service representative.

- Check all cable connections. Be sure they are in the correct place and securely attached.
- Be sure that all external equipment is plugged in and turned on. All device display windows should indicate READY or ONLINE.
- Power cycle your machine (turn the power switch OFF, wait 30 or 40 seconds, and turn it ON again).

5-4 Troubleshooting

MPE/iX Verifier

MPE/iX Verifier is a tool which verifies correct configuration of disks, tapes, printers and plotters (but not terminals) by invoking operations against them which are similar to that of a typical user. In the process it also verifies a portion of the operating system's I/O (Input/Output) subsystem.

Invoking MPE/iX Verifier

The Verifier program usually resides in the DIAG group of the SYS account. However, a command file named `VERIFY.PUB.SYS` is provided to setup the proper environment for Verifier operation.

To invoke MPE/iX Verifier log on as Manager.Sys (or any log on with SM, OP or DI capability) and enter the following:

VERIFY

User interaction with Verifier is minimal and consists of only those tasks that are necessary to perform verification procedures. An example would be responding to a tape reply request at the console and mounting a tape; or responding to a question asking if a serial print device is a plotter or a printer. For this reason, it is important that the user watch the terminal screen fairly closely while Verifier is running.

Do not be alarmed if messages appear on the screen in random or seemingly illogical order. Verifier performs more than one task at one time. For this reason, you will frequently see messages for assorted devices interspersed with one another. Do not be alarmed.

Verifier global status messages

When Verify is finished it prints one of three status messages indicating:

- Everything is okay
- Something requires attention
- There was an error

If everything verified as *okay* a message similar to the following appears:

System verification is complete. Everything is okay.
Proceed with the next operation...

If something needs *attention*, a message similar to the following appears:

ATTENTION: System verification indicates that noncritical
devices are not all working.

This message indicates a problem with a *noncritical* device. A noncritical device is everything *except*: system disks, nonsystem (private volume) disks and tape drive logical device 7.

If there is an *error*, a message similar to the following appears:

ERROR: System verification failed. Critical devices are
not functional. Do not continue to use the system.

This message indicates a *critical* device failed. You should not attempt to use your system until the problem has been corrected. *Critical* devices are all system disks, all non-system (private volume) disks and tape drive logical device 7. If you encounter this error message and you are fairly certain that your configuration is correct, call your service representative. Otherwise, reconfigure your device over again.

Verifier log file

In addition to the messages described above, MPE/iX Verifier creates a log file named VERLOG. This file contains a detailed history of the verification actions and status messages and a system I/O map which shows the current status of each device and the overall system status.

VERLOG is created in the group and account from which Verifier is invoked. However, a file equation can be used to redirect it to another location.

VERLOG is generally read and interpreted by trained service engineers. For more information, call your customer service representative.

General Usage Problems

General usage problems are those that occur in the course of everyday work, once your system is up and running.

Problems with passwords

If you forget a password contact your system administrator who can use the LISTUSER, LISTACCT or LISTGROUP commands to determine the password or the LISTFILE command to determine a file lockword.

A user who has logged on with SM (system manager) capability can determine any password or lockword on the system . If you forget the password to log on with SM capability (Manager.Sys) you must reload your system or call your service representative.

Problems logging on

- No log on prompt?

Press **(Return)** several times. If you still do not get a prompt, contact your system administrator. If you are the system administrator, refer to the "Problems with Terminals?" section of this chapter.

- Did you make a typing error in the log on identity?

Retype HELLO and your log on identity. Make sure that you separate the user name from the account name with a period (.). If a group name is added, separate the group name from the account name with a comma (,).

For example:

HELLO FRED.PROGRAM,DEVELOP

- Did you make an error entering a password?

Retype the password. Press **Return**. You have three chances to enter a correct password. If you fail in all three attempts, you will have to start the log on process over again.

- Have you forgotten your log on identity or password?

Contact your system administrator. The system administrator has SM capability and can use LISTACCT to see all accounts. System administrators can also use LISTUSER *username.accountname*;PASS to see the passwords of an account.

- Did you get a message about an account, a user, or a group not existing?

Check for any typographical errors in your log on. If no errors were made, contact your system administrator.

- Did you get the following message: Can't initiate a new session now.?

Wait a few minutes and try to log on again. If you get the same message, ask the system administrator to check the job and session limits with the SHOWJOB command.

- While logged on to a work session, did you get a message on your terminal screen beginning with OPERATOR WARNING:?

This is a priority message sent from the system operator. Read the entire message carefully, and act accordingly.

Problems streaming jobs

- Will streamed jobs not log on?

Check the job fence and job limit with the `SHOWJOB` and `LIMIT` commands. Also, be sure that `STREAMS 10` has been invoked. (`STREAMS 10` is usually included in file `SYSSTART.PUB.SYS` and is automatically invoked when your system is started. Your system administrator may want to check this file.)

Check symptoms under “Problems logging on” above.

Problems invoking commands

- Did you get the following error message on your screen after entering a command?

UNKNOWN COMMAND NAME. (CIERR 975)

Look for any spelling errors. Carefully retype the command. Use the online Help Facility to verify that you are using the command correctly.

- If a command file does not execute exactly as you anticipated (but appears to execute like an MPE/iX command), there may be a file-naming conflict on the system. There are two solutions to this problem:
 - Rename the command file to a name that does not match an MPE/iX command.
 - Use the `XEQ` command to execute the command file.

`XEQ commandfilename` Return

Command problems—obtaining online help

If you are invoking a valid MPE/iX command with no naming conflicts with command files, perhaps you entered the command incorrectly. The following tells you how to use the MPE/iX Help facility to correct possible errors.

The online Help Facility provides command information, syntax, explanations of command parameters, and examples of command use for MPE/iX commands. Any user can use it.

1. To invoke the Help Facility, enter HELP at the system prompt, and press **Return**.

:HELP **Return**

The following Help Facility menu, HELPMENU, appears on your screen:

```

                This is the MPE/iX Help Facility
-----
*      Enter SUMMARY, CLASS, a commandname, or HELPSTUDY      *
-----
SUMMARY....          A summary MPE/iX commands & HELP
CLASS.....          Classes of Commands
                      SESSIONS, JOBS, FILES, SUBSYSTEMS, ETC.
<command name>       COMMAND entries, by name
<command name><keyword> COMMAND entry with keyword
                      PARMS, OPERATION, EXAMPLE
HELPSTUDY            A beginner's introduction to Help
EXIT                 To leave the Help Facility

                You can use UPPERCASE or lowercase.

>>>>>>>>> The name of this screen is HELPMENU <<<<<<<<<<
>
```

2. At the Help Facility prompt (>), type in an option from the HELPMENU, namely SUMMARY, CLASS, a command name, a command name and parameter, HELPSTUDY, or EXIT.

3. To leave the Help Facility, type either **E** or **EXIT**. This action will return you to the system prompt (:).

>EXIT

:_

Using the Help Facility tutorial

The Help Facility has a self-paced tutorial that instructs you on its use. To start the tutorial, do the following:

1. If you are not in the Help Facility (identified by the ">" prompt), enter **HELP** at the system prompt.
2. At the Help Facility prompt, type **HELPSTUDY**.

>HELPSTUDY

3. Press to scroll through the **HELPSTUDY** screens.
4. Press **E** to leave the Help Facility.

To display a specific Help Facility topic

To display a specific topic in **HELPSTUDY**, list the contents and select the topic in which you are interested.

1. If you are not in the Help Facility (identified by the ">" prompt), enter **HELP** at the system prompt.
2. Enter **CONTENTS** at the Help (>) prompt.
3. Enter the topic that you wish to display.
4. Press to scroll through the information displays.
5. Press **E** to exit the Help Facility.

To list commands by classification within the Help Facility

The Help Facility provides lists of MPE/iX commands classified by the type of tasks performed by the commands.

1. If you are not in the Help Facility (identified by the ">" prompt), enter **HELP** **Return** at the system prompt.
2. Enter **CLASS** to display command classifications.
3. Press **Return** to scroll through the display.
4. Press **E** **Return** to exit the Help Facility.

To display command information within the Help Facility

To get information about a specific command, type **HELP** and the name of the command at the system prompt. Keywords allow you to limit the amount of information and display only the details that are of interest to you.

1. If you are not in the Help Facility (identified by the ">" prompt), enter **HELP** **Return** at the system prompt.
2. Enter the command name and an optional keyword at the Help Facility prompt (>).

Select the keyword from this list:

- a. **PARMS** lists all parameters for the command and describes each one.
- b. **OPERATION** provides an explanation of how the command works and when to use it.
- c. **EXAMPLE** offers examples of the command and its parameters.

For example, to see how the command **SHOWME** works, type the following:

>SHOWME OPERATION **Return**

3. Press **Return** to scroll through the display.
4. Press **E** **Return** to exit the Help Facility.

To display help outside the Help facility

1. From the system prompt, enter **HELP** followed by the command name. You can follow the command name with an optional keyword (**PARMS**, **OPERATION**, or **EXAMPLE**).
2. Press **Return**.

The following uses the **SHOWTIME** command as an example:

```
:HELP SHOWTIME EXAMPLE Return
```

```
EXAMPLE
```

To display the time and date, enter

```
SHOWTIME
```

```
WED, JUL 24, 1991, 8:47AM
```

```
KEYWORDS: PARM,OPERATION,EXAMPLE
```

```
:
```



You are returned to the system prompt after this display.

To display help from within an HP 3000 subsystem

Most HP programs allow Help requests from within the program.

1. Precede the **HELP** command with a colon (:).

```
:HELP
```

2. Enter the **HELP** command followed by the command name and optional keyword.

```
:HELP HELLO PARMS
```

3. Press **Return** or **Enter**.
4. Continue work within the program at the program prompt.

In the following example, the user requests a display of the **SHOWJOB** command parameters from within the **EDIT/3000** program. The “/” prompt is unique to the **EDIT/3000** program. Without including the colon (:) before the **HELP** command here, the program would expect one of its subcommands.

:HELP SHOWJOB PARS

Interpreting error messages

When you do something that doesn't work, the system frequently attempts to tell you what went wrong by providing an error message or warning.

There is an easy way to get information on what caused selected error or warning messages to occur and what action is needed for correction. Simply type the **HELP** command followed by a prefix (either **CIERR** for Command Interpreter errors, **SR** for Store or Restore errors, or **CIWARN** for Command Interpreter warning messages) and the complete error message number.

:HELP CIERRerrornum

or

:HELP SRerrornum

or

:HELP CIWARNerrornum

Note	Exclamation points (!) may appear in some error or warning messages while using the help facility. The exclamation point merely acts as a system input place holder and can be ignored.
-------------	---

Getting help with command interpreter errors

To obtain information on Command Interpreter (CI) errors (errors related to how commands are entered) do the following:

- Type the command **HELP** followed by **CIERRnn**, where *nn* is replaced by the error number.
- Press .

In the following example, an error message is displayed on the screen.

5-14 Troubleshooting

```
:showjov
```

```
UNKNOWN COMMAND NAME. (CIERR 975)
```

If more information is needed on what caused this error message and what action should be taken for correction, type **HELP CIERR975** at the prompt. Remove all spaces when typing in the error message number.

```
:HELP CIERR975 
```

```
MESSAGE UNKNOWN COMMAND NAME. (CIERR 975)
```

```
CAUSE A command was entered that was not recognized by the  
MPE/iX Command Interpreter.
```

```
ACTION Enter a valid MPE/iX Command.
```

```
:_
```

Getting help with Store/Restore errors

To obtain information on **STORE** or **RESTORE** error messages:

- Type **HELP** followed by **SRnn**, where *nn* is replaced with the error message number.
- Press .

In the following example, a store/restore message is displayed on the screen:

```
STORE/RESTORE ENCOUNTERED UNKNOWN MEDIA ON LDEV3 (S/R 11)
```

If more information is needed on what caused this error message and what action should be taken for correction, type **HELP SR11** at the prompt. Remove the / symbol, and do not include any spaces when typing the error message number.

:**HELP SR11** **Return**

MESSAGE STORE/RESTORE ENCOUNTERED UNKNOWN MEDIA ON LDEV! (S/R 11)

CAUSE Media type is incompatible with store subsystem.

ACTION Mount compatible media type or update store.

Getting help with command interpreter warning messages

To obtain information on command interpreter warning messages (CIWARN):

- Type **HELP** followed by **CIWARNnn**, where *nn* is replaced with the warning message number.
- Press **Return**.

In the following example, a command interpreter warning message is displayed on the screen:

EXTRANEIOUS DELIMITER IGNORED. (CIWARN 215)

If more information is needed on what caused this warning message and what action should be taken for correction, type **HELP CIWARN215** at the prompt. Remove any spaces when typing the error message number.

:HELP CIWARN215 **Return**

MESSAGE EXTRANEIOUS DELIMITER IGNORED. (CIWARN 215)

CAUSE You included an extra delimiter (such as a comma or semicolon) where none was called for.

ACTION No action is required; the system merely ignored the extra delimiter. You may wish to note the error for future reference.

Problems with the print command

- Did the prompt disappear after using the PRINT command?

Enter :eod (colon included) by itself on a new line and press **Return**. To prevent this from occurring again, always specify a file name when using the PRINT command.

- Did you get the following error message?

NONEXISTENT PERMANENT FILE (FSERR 52)
THE PRINT COMMAND FAILED. (CIERR 9080)

This error message means that the file name that you are trying to access, is not recognized by the computer. Check to see if the file name is spelled correctly.

Also, check that the file is in your log on group and account. If it is not, and you are the creator of the file, use the fully qualified file name.

- Did you get this error message?

SECURITY VIOLATION (FSERR 93)
THE PRINT COMMAND FAILED. (CIERR 9080)

You are trying to print a file to which you do not have access. In this case, the creator of the file must release the file (with the RELEASE command) before you can print it.

Problems printing

- Is the printer ready?

Be sure that the printer is plugged in, powered up (power switch is on), and on line.

- Is the printer out of paper, or is there a paper jam?

Load more paper, or clear jammed paper.

- Is the printer outfence too high?

The outfence should be lowered with the **OUTFENCE** command, or the output priority of files waiting to be printed (spool files) should be raised above the printer outfence with the **SPOOLER** command.

- Has the print file been deferred, or is its output priority lower than the outfence?

Use the **SHOWOUT** command to check the outfence. Use the **LISTSPF** command to check the output priority of your print file and to see if it has been deferred. Use the **SPOOLF** command to raise your print file output priority.

- Is the printer spooler queue not open or is the printer not spooled?

The system administrator should spool the printer and open the spooler queue with the **SPOOLER** command. This is usually done by the **SPOOLER** command in file **SYSSTART.PUB.SYS** when the system is started. The system administrator may wish to check this file.

- Is the printer waiting for a special form to be loaded?

Use the **RECALL** command to see if a reply request is pending for the printer. Load special forms, if necessary, and reply to the request.

- Is the printer waiting for forms alignment verification?

If special forms have been loaded the printer may be waiting for verification that the forms have been properly aligned. Use the **RECALL** command and check the printer.

- Is the printer waiting for regular paper to be loaded?

If a special forms request has just been processed, your printer may be waiting for regular paper to be reloaded. Use the **RECALL** command, as above to check.

- Has the printer been downed from the console?

The system administrator should up the printer with the **UP** command.

- Do you have a DTC problem?

If your printer fails to respond correctly, the DTC to which it is connected may have a problem.

Caution	Power-cycling a DTC will abort all terminal users on that DTC.
----------------	--

1. Check all cable connections then power cycle the DTC (turn the power off and then on).
2. Check the printer, if the problem was in the DTC the printer may now be operative.

- Has none of the above worked?

1. From the console, enter **ABORTIO** to the logical device number (113 in this example) of the printer as follows:

ABORTIO 113

2. If this doesn't work, power-cycle the printer (turn the power switch off and then on). This will cause most HP printers to perform a self-test. If the printer has a display window of any kind, observe it as the printer comes up.

If, after trying all of the above, printer problems still exist, call your service representative.

Problems using EDIT/3000

- Did the following message appear on the screen when you tried to retrieve a file in the EDIT/3000 program?

```
--F-I-L-E---I-N-F-O-R-M-A-T-I-O-N---D-I-S-P-L-A-Y--
!  ERROR NUMBER: 52      RESIDUE: 0                      !
!  BLOCK NUMBER: 0              NUMREC: 0                !
+-----+
*23* FAILURE TO OPEN TEXT FILE      (52)
NONEXISTENT PERMANENT FILE      (FSERR 52)
```

Verify the spelling of your file name with the LISTFILE command. Retype the command to retrieve a file.

- In trying to retrieve a file, did the following prompt appear on your screen?

LOCKWORD: username.groupname.acctname?

This prompt is informing you that the file has a lockword. Ask the system administrator to identify the lockword for you. At the lockword prompt, type in the lockword.

- Did you get the following error message?

OUT OF DISC SPACE (FSERR)

This error message indicates that you have run out of disk space allotted to you. To obtain disk space, delete extra files with the PURGE command or ask the system administrator to allocate more file space for your log on group (the ALTGROUP command) or your log on account (the ALTACCT command).

Problems aborting, suspending or resuming jobs

- Did you encounter the following error message while trying to abort, suspend, or resume a job?

JOB SECURITY IS HIGH OR JOB NOT YOURS, CANNOT SUSPEND,
RESUME, ALTER, OR ABORT.
(CIERR 3047)

This error message could mean one of several things:

- ☐ The job file does not belong to you.
- ☐ You have not been granted (with the `ALLOW` command) the use of the commands `ABORTJOB`, `BREAKJOB`, and `RESUMEJOB`.
- ☐ The command should be entered from the console.

Problems managing files

- Did you accidentally delete a file?

Ask the system administrator when the last system backup was performed. The system administrator should be able to restore a previous version of a file that has been deleted.

- When using the `PURGE` command, did you get the following error message on your screen?

FILE filename NOT FOUND, NO PURGE DONE. (CIWARN 383)

Check for any typographical errors or misspellings in the file name.

- When using the `RENAME` command, did you get the following error message?

DUPLICATE PERMANENT FILE NAME (FSERR 100)
RENAME FAILED DUE TO SYSTEM ERROR, NOT RENAMED. (CIERR 373)

This error message indicates that the name to which you are renaming your file already exists. Re-enter the command line, this time selecting a unique file name.

- When using the `RELEASE` command, did you get the following error message?

ACTION DISALLOWED SINCE NOT CREATOR OF FILE. (CIERR 351)

This error message indicates that you are not the creator of the file and do not have the authority to release the file's security. Have the creator enter the command, or have the creator release the file for your use. Do not forget to tell the creator when you are finished so that the file can be secured.

If you are the administrator or operator for the system, check to see if you logged on with the appropriate log on. The **MANAGER.SYS** logon should allow you to access any file.

Problems with passwords

- Did you forget your password?

Use the **LISTACCT**, **LISTUSER** or **LISTGROUP** commands to display the forgotten password. Use the **LISTFILE** command to display a forgotten lockword (file level password).

A user with **SM** (system manager) capability can display any password or lock word on the system. Individual users can display passwords for their logon and lockwords for files they have created. A user with **AM** (account manager) capability can display all passwords (user, group and account) for the account for which the user has **AM** capability.

Problems with backups

Several things may cause a backup to malfunction:

- Was the unload button of the tape drive accidentally pressed during the backup process?

Start the backup procedure over again from the beginning.

- Did the backup not start because the backup device was never assigned to the job?

Be sure that someone responds to the backup device reply request on the console (usually a tape request). Or, if you want the reply to be automatic (so that a console reply is not needed) be sure your backup device has been configured for auto-reply.

Problems with terminals

- Did your terminal screen suddenly turn off?

Some terminals have a feature that causes the screen to turn itself off automatically after several minutes of user inactivity. If this happens, press any key on the keyboard to reactivate the screen.

- Is the keyboard not responding?

Sometimes the terminal screen and the keyboard seem to “freeze up” and become unresponsive. There may be a problem with the power source, or you may have what is called a *hung* terminal.

Several hung terminals could mean serious system problems. If there is such an occurrence on your system, call your service representative immediately.

Here are some remedies for a hung terminal.

- **Method 1:** Wait a few minutes.

1. Wait a few minutes.
2. Press **Return** several times.

- **Method 2:** Check that the terminal is not in **Ctrl S**.

1. Press **Ctrl Q**.

CTRL S may have been pressed. This prevents the computer from displaying output on your terminal screen. By pressing **CTRL Q**, output once again begins displaying.

- **Method 3:** Check that your terminal is in the correct mode.

1. Look at the bank of terminal keys at the top of your keyboard. In the middle of the row of keys marked **F1** through **F8**, locate and press the one labeled **System**.
2. This should change the softkeys displayed at the bottom of your terminal screen. Locate and press the softkey **F4**, labeled **Modes**.
3. This changes the softkey display. Look at the softkey labeled **BLOCK MODE**. Make sure that the **BLOCK MODE** key *does not* contain an asterisk (*) in the label. If it does, press **F3** to toggle the asterisk “off.”

4. Look at the softkey labeled **AUTO LF**. Make sure that the **AUTO LF** key *does not* contain an asterisk (*) in the label. If it does, press **(F3)** to toggle the asterisk “off.”
5. Locate and check the **REMOTE MODE** label. Make sure that an asterisk (*) *does appear* in the label. If not, press **(F4)** to toggle the asterisk “on.”
6. Press **(Return)** several times to see if the system prompt appears.

■ **Method 4:** Perform a terminal “soft reset.”

1. Press **(Shift)** **(Reset)**.
2. Press **(Return)** several times.

If your terminal hang occurred while you were in the middle of work on the system, do the following:

1. Press **(Shift)** **(Reset)**.
2. Press **(Return)** several times.
3. At the system prompt, type **ABORT** **(Return)**.

This terminates whatever process you were working on and may free your terminal.

■ **Method 5:** Check the cable connections.

1. Check that the terminal is plugged into its power source.
2. Check to see if the terminal is turned on.
3. Check that the terminal is connected to the DTC.
 - a. Make sure that the cable is connected firmly at the back of the terminal.
 - b. Trace the cabling back to its connection on the DTC. Make sure that the cable is firmly attached to the connector.

■ **Method 6:** Perform a terminal hard reset.

1. Press **(Shift)** **(Ctrl)** **(Reset)** simultaneously.

■ **Method 7:** Turn the terminal off and back on.

Caution

The following procedure should not be performed on the system console. If you are using the console, refer to the section entitled, "Problems with consoles."

1. Turn the terminal off and then back on again.

■ **Method 8:** Abort your session.

Have the system administrator abort your session.

If you are the system administrator, do the following from the system console:

1. Enter the following:

SHOWJOB JOB=@S Return

A screen similar to the following appears:

JOBNUM	STATE	IPRI	JIN	JLIST	INTRODUCED	JOBNAME
#S22	EXEC		20	20	TUE 8:46P	JOANN.YUKI
#S43	EXEC		105	105	WED 9:32A	MANAGER.SYS

2 JOBS (DISPLAYED):

- 0 INTRO
- 0 WAIT; INCL 0 DEFERRED
- 2 EXEC; INCL 2 SESSIONS
- 0 SUSP

JOBFENCE= 7; JLIMIT= 2; SLIMIT= 15



2. Identify your session number, identified under JOBNUM as #Snn.
3. Enter the following:

ABORTJOB #Snnn Return

Replace *nnn* with the session number of the hung terminal.

4. After the session abort message appears on the user's terminal screen, and the log off message has been displayed on the console, have the user press **Return** several times.
5. If the log on prompt (MPE/iX:) does not appear on the user's terminal, enter the **ABORTJOB** command again.

■ **Method 9:** Determine if other terminals are hung.

If all terminals connected to the same DTC are hung the problem could be with the DTC.

Caution Power-cycling a DTC will abort all users on that DTC.

1. Power cycle the DTC (turn the power off and then on).
2. Check the console to ensure the DTC downloads successfully.
3. If the DTC does not download, check the cable connections.
4. Check the hung terminals, if the problem was in the DTC the hung terminals may now be all right.

Problems with the console

An unresponsive console is a more serious problem than an unresponsive terminal. You cannot monitor or control the system when the console is "hung."

Is the prompt missing?

Press **Return** several times.

Is the console not responding?

If the console is hung, try the first six methods of the "Problems with terminals" section.

If after attempting these methods the console is still hung, check the following:

Is the console BAUD rate set to 9600?

Check that the BAUD rate (the speed at which the console transmits and receives data) is set to 9600.

Is the console receiving messages from other users?

Check to see if another user on the system can send a message to the console. Have someone using a working terminal do the following to send a message to the console:

1. Type a message using the TELLOP command.

TELLOP Let's try this! **Return**

2. When this message appears on the console screen, press **Return** to get the colon prompt.

Are there too many pending console requests?

Too many pending console requests can cause the console to appear hung. Check to see if there are any pending console requests using the RECALL command.

1. Hold down the **Ctrl** key and press **A**.
2. At the = prompt, type RECALL **Return**.
3. Respond to pending requests one at a time, using the REPLY command.

No response to **Ctrl A?**

If there is no = prompt, abort input and output to the console from another working terminal.

1. Log on to another terminal as MANAGER.SYS.

:HELLO MANAGER.SYS **Return**

2. At the prompt, enter CONSOLE **Return**. This determines the current LDEV number of the console. The system console is normally LDEV 20.
3. Enter ABORTIO followed by the console logical device number:

ABORTIO 20 **Return**

You must have SM capability to use this command.

4. Repeat this command a few times until you see the following message:

NO I/O TO ABORT FOR DEVICE *nn*

5. Press **Return** several times to get to the system prompt.

Switch console control to a working terminal

It may be necessary to abort your original console session. To do so, you must switch the console controls to a working terminal. You must have, or be allowed, SM capability to do the following procedures:

1. Log on to another working terminal as **MANAGER.SYS**.
2. At the prompt, enter **CONSOLE** **Return**. This determines the current LDEV number of the console. The system console is normally LDEV 20.
3. Enter **SHOWME** **Return**. This determines the LDEV number of the terminal that you are using.
4. Enter **CONSOLE nn** **Return** where *nn* is replaced by the LDEV number of the terminal that you are currently using. For example, if you were to move the console from LDEV 20 to the terminal that you are using (LDEV 31), you would type the following:

CONSOLE 31 **Return**

5. Verify that the console has been moved by typing **CONSOLE** **Return**.
6. Enter **SHOWJOB JOB=MANAGER.SYS** **Return** to determine the session number that you were using on the original console.
7. At the prompt, enter **ABORTJOB #Snn** **Return** to abort your original session at the console.
8. When the log off message displays on this terminal, go back to the original console, and press **Return** several times.
9. Log on to the original console by entering **HELLO MANAGER.SYS;HIPRI** **Return**.
10. Move the console control back to the original console. For example, if the console was identified as 20, you would enter **CONSOLE 20**.

Problems with tapes

If a problem occurs, the first step is to try to establish whether problem lies with the tape, the drive, the host computer and connections, or with the way the system is being operated.

- Are you using new tapes, or a different brand of tapes? Is the Caution signal being displayed by the drive? Have you been using the particular tape for a very long time? Then the problem could be the tape.

If you suspect the tape:

1. Clean the tape heads (if you have a DDS tape drive use the cleaning cassette).
 2. Try the operation again.
 3. If the problem still occurs, try using a different tape (tape cassette for DDS drives).
 4. If the problem persists, the tape is probably not the cause.
- Has the tape drive been moved recently? Has the environment changed, unusually hot, cold, damp or dry? Has there been dust or dirt near the drive? Have reasonable precautions against static been taken? If so, then the problem could be the tape drive. If you suspect the problem is with the drive:
 1. Clean the tape heads and try the operation again.
 2. If the problem persists, check the environmental conditions against the drive's specified limits and try to correct the conditions if they are outside the limits. Perhaps move the drive to a more suitable site.
 - Has a new operating system been installed in the host computer? Have any cables been disconnected and reconnected? Then the problem could be in the host or the connections.

If you suspect problems in the host call your service representative.

- Is someone new operating the system? Has the operator just returned after a long absence? Then the problem may be caused by incorrect operation.

If you suspect improper operation, ask the person to repeat the operation while you watch, to check that they are not omitting some vital step.

Other Hardware problems

If you are having problems with any of the peripherals attached to the computer system, refer to the user's guide of each particular piece of equipment.

READER COMMENT SHEET

Systems Technology Division

HP 3000 Series 9x7 PA-RISC Computer Systems
Operator's Handbook

Manual Part Number A1707-90010 December 1992

A reader comment sheet helps us to improve the readability and accuracy of the document. It is also a vehicle for recommending enhancements to the product or manual. Please use it to suggest improvements.

SERIOUS ERRORS, such as technical inaccuracies that may render a program or a hardware device inoperative should be reported to your HP Response Center or directly to a Support Engineer. An engineer will enter the problem on HP's STARS (Software Tracking and Reporting System). This will ensure that critical and serious problems receive appropriate attention as soon as possible.

Editorial suggestions (please include page numbers): _____

Recommended improvements (attach additional information, if needed):

Name: _____ Date: _____

Job Title: _____ Phone: _____

Company: _____

Address: _____

HP 3000 Series _____ (e.g., 922, 932, 925, 935, 949, 950, etc.)

HP 9000 Series _____ (e.g., 822, 832, 825, 835, 845, 850, etc.)

☐ Check here if you would like a reply.

Hewlett-Packard has the right to use submitted suggestions without obligation, with all such ideas becoming property of Hewlett-Packard.



Publications Manager – Hardware
Hewlett-Packard Company
Systems Technology Division
19483 Pruneridge Avenue
Mailstop 42UK
Cupertino, California 95014-9786

– POSTAGE WILL BE PAID BY ADDRESSEE –

FIRST CLASS PERMIT NO. 1070, CUPERTINO, CA 95014

BUSINESS REPLY MAIL

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



Fold and tape bottom edge.

READER COMMENT SHEET

Systems Technology Division

HP 3000 Series 9x7 PA-RISC Computer Systems
Operator's Handbook

Manual Part Number A1707-90010 December 1992

A reader comment sheet helps us to improve the readability and accuracy of the document. It is also a vehicle for recommending enhancements to the product or manual. Please use it to suggest improvements.

SERIOUS ERRORS, such as technical inaccuracies that may render a program or a hardware device inoperative should be reported to your HP Response Center or directly to a Support Engineer. An engineer will enter the problem on HP's STARS (Software Tracking and Reporting System). This will ensure that critical and serious problems receive appropriate attention as soon as possible.

Editorial suggestions (please include page numbers): _____

Recommended improvements (attach additional information, if needed):

Name: _____ Date: _____

Job Title: _____ Phone: _____

Company: _____

Address: _____

HP 3000 Series _____ (e.g., 922, 932, 925, 935, 949, 950, etc.)

HP 9000 Series _____ (e.g., 822, 832, 825, 835, 845, 850, etc.)

☐ Check here if you would like a reply.

Hewlett-Packard has the right to use submitted suggestions without obligation, with all such ideas becoming property of Hewlett-Packard.



Publications Manager – Hardware
Hewlett-Packard Company
Systems Technology Division
19483 Pruneridge Avenue
Mailstop 42UK
Cupertino, California 95014-9786

– POSTAGE WILL BE PAID BY ADDRESSEE –

FIRST CLASS PERMIT NO. 1070, CUPERTINO, CA 95014

BUSINESS REPLY MAIL

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



Fold and tape bottom edge.

READER COMMENT SHEET

Systems Technology Division

HP 3000 Series 9x7 PA-RISC Computer Systems Operator's Handbook

Manual Part Number A1707-90010 December 1992

A reader comment sheet helps us to improve the readability and accuracy of the document. It is also a vehicle for recommending enhancements to the product or manual. Please use it to suggest improvements.

SERIOUS ERRORS, such as technical inaccuracies that may render a program or a hardware device inoperative should be reported to your HP Response Center or directly to a Support Engineer. An engineer will enter the problem on HP's STARS (Software Tracking and Reporting System). This will ensure that critical and serious problems receive appropriate attention as soon as possible.

Editorial suggestions (please include page numbers): _____

Recommended improvements (attach additional information, if needed):

Name: _____ Date: _____

Job Title: _____ Phone: _____

Company: _____

Address: _____

HP 3000 Series _____ (e.g., 922, 932, 925, 935, 949, 950, etc.)

HP 9000 Series _____ (e.g., 822, 832, 825, 835, 845, 850, etc.)

☐ Check here if you would like a reply.

Hewlett-Packard has the right to use submitted suggestions without obligation, with all such ideas becoming property of Hewlett-Packard.



Publications Manager – Hardware
Hewlett-Packard Company
Systems Technology Division
19483 Pruneridge Avenue
Mailstop 42UK
Cupertino, California 95014-9786

– POSTAGE WILL BE PAID BY ADDRESSEE –

FIRST CLASS PERMIT NO. 1070, CUPERTINO, CA 95014

BUSINESS REPLY MAIL

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



Fold and tape bottom edge.